

BOTANY.—*Two new genera of grasses from China.* Y. L. KENG, Department of Biology, Nanking University, and Chung Shan Memorial Nanking Botanical Garden, Botanical Institute, Academia Sinica. (Communicated by Agnes Chase.)

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During the past few years the author and his collaborators have devoted themselves to writing in Chinese an illustrated flora of the grasses of China. Although they have intended to include in this work only the more familiar species, there are about 200 genera and 800 species described and figured in it. Among the ample material gathered from the different parts of the country, a good many novelties have been encountered in the course of their study. Two new genera are here presented for publication.

*Sinochasea*¹ Keng, genus novum tribus Agrostidearum, cum *Deyeuxia* Clarioni et *Calamagrostide* Adansoni comparandum; ab illa rhachillae continuatione minuta plerumque glabra haud penicillata, lemmate sub lobos omnino villosa, ab hac lemmatis callo breviter barbato, arista inter lobos valida, geniculata, et ab utraque glumis saepe 5- (vel inferiore 6-, superiore 4-) haud 1-3-nervibus, stigmatibus tribus distinguendum.

Spiculae uniflorae, in paniculam contractam dispositae, lateraliter leviter compressae, rhachilla supra glumas facile disarticulata, in acumen minutum glabrum supra paleam producta; glumae subaequales vel prima saepius longior, herbaceae, plerumque prominenter quinque-nerves, dorso carinatae vel basin versus rotundatae, marginibus anguste hyalinis; lemma glumis brevior, lateraliter compressum vel inferne dorso rotundatum, a latere videtur anguste oblongum, profunde bilobum, aequaliter villosum, chartaceum vel inferne subcoriaceum, sed lobis glabris, superne membranaceis, quinque-nervis, nervo medio valido, elevato, sed basin versus tenui, e sinu aristam geniculatam exserente, nervis lateralibus inferne obscuris, superne per lobos paralleliter percurrentibus, marginibus inter se imminentibus, paleam omnino occultantibus, callo minuto, rotundato-obtuso, breviter

densiusque barbato; palea a dorso visa anguste lanceolata, bidentata, lemmate brevior tenuiorque, obscure binervis, inter nervos (carinas) adpresse villosa et superne subhyalina, marginibus inflexis, approximatis vel remotis (i.e. haud inter se imminentibus); lodiculae duae, semi-ovatae, hyalinae; stamina tria; filamenta elongata; antherae oblongae; ovarium fusiforme vel lineare, glabrum; styli tres, terminales, brevissimi stigmatibus dense plumosis; caryopsis (immatura) a lemmate paleaque libera.

Gramen perenne, caespitosum; culmi validi, simplices, paucinodosi; foliorum laminae lineares, involutae; panícula terminalis, erecta vel leviter arcuata.

Species adhuc cognita unica, in provincia Tsinghai, Chinae occidentalis, endemica.

Sinochasea trigyna Keng, sp. nov. (Fig. 1). Perennis glabra, basi cum vaginis vetustis brunneis et innovationibus intravaginalibus circumdata, radicibus fibrosis validis, circ. 0.8 mm. crassis, e rhizomate duro brevi ortis; culmi erecti, rigidi, teretes, circ. 45 cm alti, 1.5 mm in diametro 2-3-nodosi, nodo supremo sub medium usque ad 2/3 superiorem sito; folia pallide viridula, erecta, caulina duo vel tria; vaginae arctae, striatae, scabridulae, internodio 11-18.5 cm longo multo breviores; ligula membranacea vel firmula, truncata vel lacerata, 0.5-1 mm longa, in margines vaginae decurrens; laminae e basi angustata anguste lineares, rigidae, valide nervosae, subulato-involutae, 6.5-8.5 in innovatione usque ad 16 cm longae, expansae 1-2 raro 3 mm latae, suprema saepe valde abbreviata, setiformi, 1-2 cm longa, utrinque ut in marginibus scabrae vel ad paginam superiorem setuloso-asperae; panícula spiciformis, anguste lanceolata, 7-8.5 cm longa, circ. 1 cm lata, continua vel inferne interrupta, ramis binis, adpressis, primariis usque ad 3 cm longis, inferne plus minusve nudis, superne divisis et 4-7-spiculatis; pedicelli sicut rami setuloso-scabriduli, adpressi, laterales 0.6-1.5 terminales 3-5 mm longi; spiculae anguste lanceolatae, 10-12 mm longae, confertae, pallide viridulae vel purpurascetes, demum hiantes; glumae spiculam aequantes vel subaequantes, acuminatae,

¹ Name from a combination of *Sino-*, China, and *Chasea*, after Mrs. Agnes Chase, well-known agrostologist of the United States, who gave much help to the study of Chinese grasses.

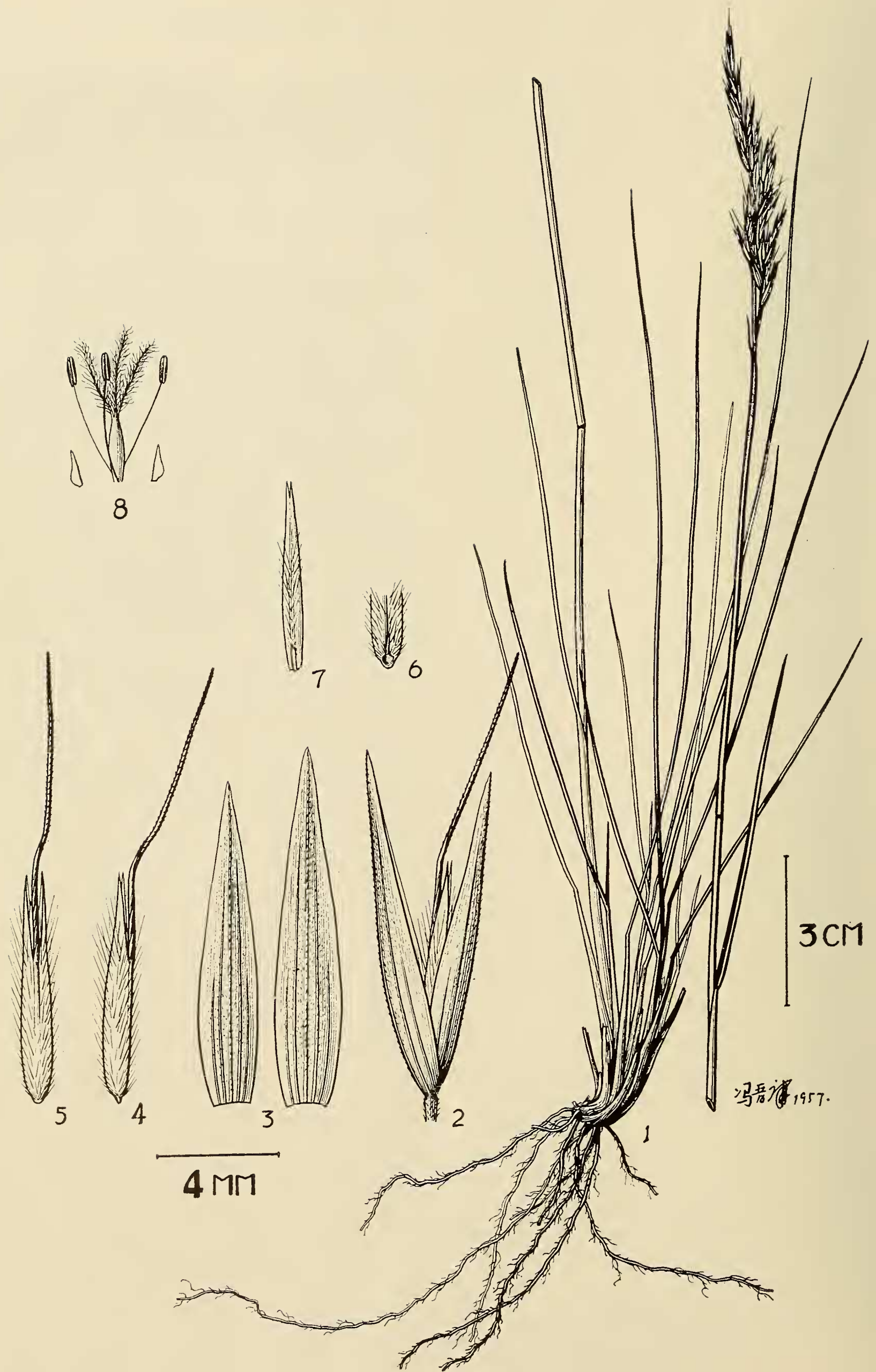


FIG. 1.—*Sinochasea trigyna* Keng: 1, Habit; 2, spikelet; 3, first and second glumes; 4, side view of lemma; dorsal 5, view of the same; 6, ventral view of the lower part of lemma showing the prolonged rachilla; 7, dorsal view of palea; 8, lodicules, stamens, and pistil. (Type.)

prima saepius quam secunda 0.5–1 mm longiore, distincte quinquenerves vel prima inferne 6-, secunda 4-nervis sublaeves vel minutissime scaberulae, saepe apicem versus recurvatae; lemma 7–8 mm longum, pilis albis circ. 2 mm longis villosum, lobis acuminatis, circ. 3 mm longis, callo pilis densis 0.5–0.75 mm longis barbato; arista scaberula, in 1/3 inferiore parte geniculata, columna laxius contorta, 3–3.5 mm, subula 7–8.5 mm longa; rhachillae processus 0.5–1 mm longus, laevis, glaber vel raro pilis 1–3 sparse pilosus; palea 6 mm longa, 0.75 mm lata (marginibus inflexis excl.), dentibus acuminatis, vix 1 mm longis, nervis (carinis) sub dentes minute ciliolatis; lodiculae anguste semiovatae, circ. 1.5 mm longae, inferne firmulae, glabrae, acuminatae vel altera saepe breviter cuspidata; antherae flavo-brunneae, 1 mm longae; ovarium purpureo-nigrescens, circ. 2 mm longum, ventraliter canaliculatum; stigmata flavo-brunnea, 2–3 mm longa; caryopsis immatura.

CHINA: Prov. Tsinghai, Hai-yen Hsien, San Chio Shen, Sheep-breeding Station, San Tui Tui Pu, 21 VIII 1954, *P. C. Yeh & W. C. Wang*, etc. 3241 (type in Herbarium of the Department of Biology, Nanking University; duplicate types in Herb. Botanical Institute, Peking, and Chung Shan Memorial Nanking Botanical Garden, Nanking).

This species is peculiar in the tribe in having three stigmas. The spikelets are probably cleistogamous, the short oblong anthers in the mature florets often being entangled with the hairs of the stigmas which, after removal of the lemma, are seen partly exposed laterally on the outside of the inflexed margins of the palea.

This genus appears to be comparable with the two closely related genera *Deyeuxia* and *Calamagrostis*, the former being regarded by some authors as a section of the latter. It is allied to *Deyeuxia* through *D. moupinensis* (Franch.) Pilger, since that species, though differing in having callus-hairs equaling the lemma, has also a geniculate awn arising from the sinus of a deeply bilobed lemma. It is also similar to such species of *Calamagrostis* as *C. Munroana* Boiss. and *C. Griffithiana* Hook. f., in which the lemma is villous all over and the callus hairs shorter than the lemma.

*Anisachne*² Keng, genus novum tribus Agro-

² Name from Greek *anisos*, unequal, and *achne*, scale, referring to the unequal and successively greater length of the first glume, second glume, and lemma.

stidearum, *Deyeuxiae* Clarioni, arcte affine lemmate glumis longiore, gluma inferiore quam superiore plerumque brevior differt.

Spiculae uniflorae, lateraliter compressae, in paniculam dispositae, rhachilla supra glumas disarticulata, in setam minutam villosam supra paleam producta; glumae subaequales vel prima quam secunda saepius leviter brevior, uninerves vel secunda inferne trinerves, viridi-carinatae, albo-marginatae; anthoecium hermaphroditum, ad anthesin hians; lemma glumis saepe longius, tenuiter chartaceum vel membranaceum, superne obscure quinquenerve carinatumque, inferne dorso rotundatum, muticum vel sub apicem mucronatum, callo minuto dense barbato excepto glabrum; palea lemmate brevior tenuiorque, ab eo laxe inclusa vel ad maturitatem dorso exposita, bicarinata; lodiculae duae, hyalinae; stamina tria; filamenta demum elongata; antherae oblongae; ovarium obovatum, glabrum; styli duo, terminales, brevissimi; stigmata sparse plumosa, lateraliter exserta; caryopsis ellipsoidea, dorso rotundata, facie leviter sulcata, inter lemma paleamque inclusa, libera; hilum subbasale, breviter lineare; embryo parvus.

Gramen perenne, caespitosum; culmi graciles vel gracillimi, simplices, plurinodosi; foliorum laminae lineares, planae vel involutae; panícula terminalis, angusta vel ad maturitatem aperta.

Species adhuc cognita unica, Chinam austro-occidentalem inhabitat.

Anisachne gracilis Keng, sp. nov. (Fig. 2). Perennis glabra, radicibus filiformibus ex rhizomate duro brevi ortis, innovationibus extravaginalibus, tenuibus, erectis vel saepius decumbentibus; culmi erecti vel saepe geniculati, basi vaginis marcidis fibrosis albo-brunneis obtecti, 25–40 cm alti, 0.5–1 mm in diametro, lenes, 3–4-nodosi, nodo supremo infra vel in juventate supra medium sito; vaginae striatae, laeves, basin versus clausae, internodio 3–7.5 cm longo breviores, vel inferiores eo 12–20 mm longo leviter longiores, suprema 6–11 cm longa, quam sua lamina longiore; ligula scariosa, truncata vel obtusa, 0.5–1 vel usque ad 2 mm longa, in margines membranaceas decurrens; laminae ubique aequilata vel basi vix contracta, lineares, fusco-viridulae, firmulae, planae vel siccitate involutae, utrinque scaberulae, caulinae superiores breviores, 2.5–8.5 cm longae, 0.8–1.5 mm latae; panícula 7–16 cm longa, exserta vel basi in juventate vagina suprema inclusa, ramis filiformibus vel subcapillaribus, scaberulis, 2–3-nis, longe remotis,

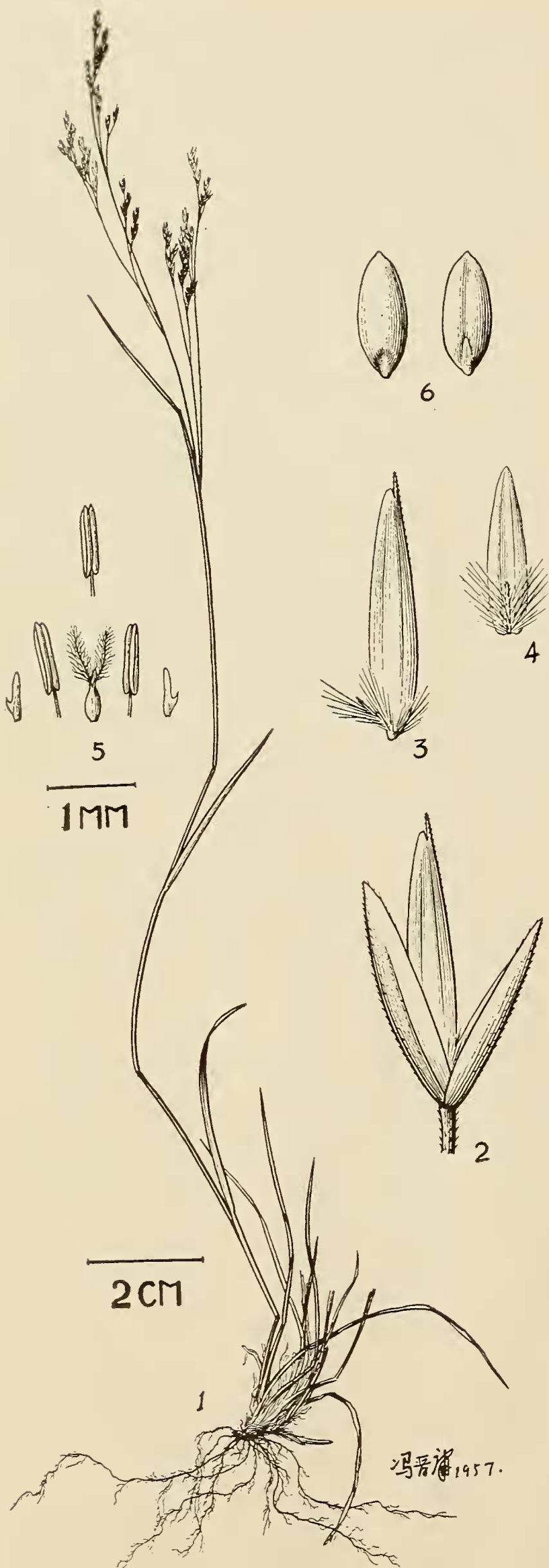


FIG. 2.—*Anisachne gracilis* Keng: 1, Habit; 2, spikelet; 3, side view of lemma with prolonged rachilla; 4, dorsal view of palea with prolonged rachilla; 5, lodicules, stamens, and pistil; 6, dorsal and ventral views of caryopsis. (1-5 from type, 6 from Wang Chi-wu 83229.)

erectis vel basalibus ad maturitatem adscendenti-patentibus, primariis 3.5-8 cm longis, inferne longe nudis, superne supra vel infra medium ditrichotomis; pedicelli laterales 0.5-2 mm terminales usque ultra 3 mm longi, scaberuli, apice incrassati; spiculae circ. 3 mm longae, demum hiantes; glumae acutae vel secunda obtusiuscula, pallide viridulae, margine albo-vel purpureomembranaceae, ad maturitatem stramineae, prima 1-nervis, 2-2.5 mm longa, secunda 1-3-nervis, 2.5-2.8 mm longa, ad carinam scaberulae; lemma spiculam aequans, acutum vel sub apicem saepius mucrone 0.2 mm longo praeditum, callo pilis circ. 1 mm longis dense barbato; rachillae continuatio penicillata, 0.3-0.5 mm longa, conjuncte cum pilis villosis lemmatis dimidium aequans; palea glabra cum lateribus inflexis anguste lanceolata, 2 mm longa, ad carinas sublaevis vel sparse minutissime scaberula; lodiculae semi-ovatae vel inferne trilobatae, 0.8 mm longae, glabrae; antherae fulvae, 1 mm longae; caryopsis obesa, flavo-brunnea, 1.25 mm longa.

CHINA: Prov. Kweichow, Pichieh Hsien, on acid sandy soil, altitude 1,400 meters, June 1, 1943, *Hou Hsueh-yuh* no. 2143 (type in the herbarium, Department of Biology, Nanking University, Nanking, China). Prov. Yunnan, *E. E. Maire* 6895, 6898 in part; Likiang Snow Range, *J. F. Rock* 10693; Wei-hsi, 1955, *Hu Yung-kang* without number; Mengtze, 1939-40, *Wang Chi-wu* 83229; Dali, en route from Tsang Shan Miao to Chung Ho Sze, October 2, 1946, *Liou Tchen-ngo* 21012, in part.

In the author's manuscript on the Grasses of China [unpublished] this species was misidentified as *Deyeuxia abnormis* Hook. f., which is, according to the original description given in the Flora of British India, neither a *Deyeuxia* nor an *Agrostis*. It seems that this Indian species may need to have another generic name, just as in the same Flora the next species *Deyeuxia treutleri* (Kuntze) Stapf did; the latter has been made the type of the genus *Aulacolepis* Hackel.

The new genus here described, as noted in the Latin diagnosis, appears to be related to *Deyeuxia* Clarion through the presence of a villous prolonged rachilla and a shortly bearded callus. If its glumes were longer than the lemma, it would undoubtedly be referred to the genus *Deyeuxia*, and the species would be included in the same series with awnless lemmas as is *Deyeuxia diffusa* Keng, from Yunnan, China.